AU/ACSC/02-027/2002-04

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

THE CASUALTY CARE INTERFACE BETWEEN THE AIR FORCE MEDICAL SERVICE AND AIR FORCE SPECIAL OPERATIONS FORCES

by

Janelle E. Costa, Major, USAF

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Advisor: Major Bridget K. Carr

Maxwell Air Force Base, Alabama

April 2002

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
00 APR 2002	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
The Casualty Care Interface Between The Air Force Medical Service And Air Force Special Operations Forces	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Air University Maxwell Air Force Base, Alabama**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**UU**	**47**	

Disclaimer

The views expressed in this academic research paper are those of the author and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

Contents

Page

Illustrations

Page

Tables

Page

Preface

Before the academic year started, I knew that I wanted to do an independent research project. I chose this topic from the list submitted to the AF Surgeon General (SG) because I wanted a medical topic and I was intrigued with Special Operations Forces (SOF) and wanted to learn more. Like many conventional medics, I knew little about the SOF missions or operational environment. Most importantly, I wanted to conduct research that would be helpful and meaningful to other military members, especially in light of the events of 11 September 2001. Hopefully, I was successful.

I would like to recognize many knowledgeable and patient people who assisted with this research. First, a special thanks to my faculty advisor, Maj Bridget Carr, whose vast research expertise, experience, and advice was invaluable to me. Many others at Maxwell were extremely helpful: Col Richard Hersack, AF Surgeon General Chair to the Air University, who provided a wealth of technical advice and background information; Maj Stephanie Smith from the AF Doctrine Center who directed me to the right resources and answered doctrinal questions; and Col John Jogerst and Maj Ted Corallo who provided Line of the AF and SOF operator insights. I am especially grateful to Col James Dougherty, AF Special Operations Command Surgeon General (AFSOC/SG), for taking the time to compose and submit this research topic. In addition, Col Dougherty, Maj David Johnson, and the rest of the SOF medical staff at Hurlburt Field were extremely helpful throughout this project, especially during my visit to Hurlburt Field.

They truly are the SOF medical experts. I would also like to thank my husband, Ken, for his tireless support during the entire school year and especially his encouragement with this project. Lastly, I would like to dedicate this effort to my mother, Dora Lynn Rice, who was diagnosed with cancer in September 2001. Her positive attitude and never give up outlook inspired me.

AU/ACSC/02-027/2002-04

Abstract

This research paper examines the AF Special Operations Command (AFSOC) medical system, specifically the care and management of SOF casualties as they move from point of injury to hand-off to the conventional AF Medical Service (AFMS) systems. The paper analyzes current AFSOC medical assets, missions, capabilities, as well as limitations, constraints, and challenges with the aim of determining what additional capabilities AFSOC medics need and why. The critical interface points between SOF and the conventional AFMS are also studied. The intent is to determine where and how the interface should take place as well as how it can be improved.

The ultimate purpose of this research is simple – to save more lives. SOF are very active all over the world performing extremely hazardous missions in austere environments in pursuit of national security objectives. They deserve the best medical care possible delivered far forward where they operate.

Most of the background information is based on historical data on casualty care and evacuation and current policies and procedures from doctrine – joint, Air Force, and tactics, techniques, and procedures. Key information was also obtained from talking to experts in the conventional AFMS and AFSOC medical systems.

During this research, important issues were analyzed, leading to conclusions and recommendations. The primary conclusion is that AFSOC does need additional assets to enhance their medical capabilities. Specifically, like the conventional AFMS, AFSOC

should have its own organic surgical and in-flight critical care capabilities in the form of teams developed for the SOF environment. Once established, these teams need the appropriate training, supplies, and equipment to provide life and limb-saving care as close to the seriously injured casualties as possible. In addition, recommendations are made regarding the SOF-conventional AFMS interface – where it should ideally take place and suggestions for improving the interaction between SOF and conventional forces.

Chapter 1

Introduction

> *In our global campaign against global terror, our military must have every resource, every tool, every weapon, and every advantage you need for the missions to come.*
>
> —George W. Bush, President of the United States, 30 January 2002

The purpose of this research is to determine what additional capabilities and assets the AFSOC medical community must have to more effectively accomplish their mission and how to improve the interface points between the conventional AFMS and SOF medics. The ultimate purpose is to enhance medical care provided to SOF casualties.

Prior to 11 September 2001, SOF were conducting dangerous missions, including counter-terrorism, all over the globe. It was just not covered on the news every day. Now, SOF are the weapon of choice in the current war against terrorism. In addition to their many other missions, the SOF counter-terrorism role could certainly increase as terrorist groups are "rooted out" over the next months and years. As SOF continue to perform even more (and still very dangerous) missions, AFSOC medical care must continue to be there to support them. Not just any medical care, but the best care available to save as many lives as possible. Since AFSOC was formed over 10 years ago, medical care and movement of SOF casualties from far forward has been conducted by ad hoc arrangements, under strict security constraints, and with variable logistical integration with the conventional AFMS casualty care system. Now, questions are being

asked: What additional capabilities should AFSOC medical forces have to more effectively and efficiently perform their mission? Why are more organic capabilities required? How should AFSOC medics interface with conventional AFMS medics? The AFSOC/SG's ultimate goal is to provide SOF casualties with seamless, top-quality care across the continuum, from AFSOC medical forces through hand-off to conventional AFMS systems. Before delving into the primary issues, it is important to set the stage with a general overview of SOF, the focus of Chapter 1. Chapter 2 then reviews historical data on casualty care and evacuation and provides in-depth information on AFSOC medical assets, missions/capabilities, limitations/constraints, as well as interfaces with conventional AFMS systems. Chapters 1 and 2 are based primarily on current Joint and AF doctrine and provide the necessary background for Chapter 3, an analysis of the key issues facing AFSOC medical forces today and in the future. Most of the information for Chapter 3 was obtained from discussions with SOF medical experts. Chapter 4 summarizes this research, provides conclusions, and recommends specific actions.

Special Operations Forces: General Background

In 1987 Congress mandated the creation of the United States Special Operations Command (USSOCOM) with the responsibility to prepare and maintain combat-ready SOF to theater combatant commanders to successfully conduct special operations.[1] As a unified command, USSOCOM is responsible for training, equipping, and employing its forces. USSOCOM is unique in that it also has service-like responsibilities for developing and executing a program and budget, for authorizing and funding research, and for acquisition of SOF-specific items. Direct management of SOF through Major

Force Program-11 ensures that SOF are prepared to meet a wide-range of operational requirements.[2]

SOF missions are divided into principal and collateral. Principal missions include counter-proliferation, counter-terrorism, foreign internal defense, special reconnaissance, direct action, psychological operations, civil affairs, unconventional warfare, and information operations.[3] In addition, SOF are often tasked to participate in collateral activities including coalition support, combat search and rescue, counter-drug activities, humanitarian demining activities, humanitarian assistance, security assistance, and special activities.[4] The unique demands of SOF operations require forces with attributes that are different from conventional forces. SOF do not substitute for, but complement conventional capabilities.[5] The "SOF Truths" summarize this notion well: humans are more important than hardware; quality is better than quantity; competent SOF cannot be created after emergencies arise; and SOF cannot be mass-produced.[6]

USSOCOM has one sub-unified and three component commands: Joint Special Operations Command, US Army Special Operations Command (USASOC), Naval Special Warfare Command, and AFSOC.[7] Clearly recognizing and acknowledging that special operations missions are usually joint in nature, this paper will focus on AFSOC. The AF Core Competencies – Aerospace Superiority, Precision Engagement, Information Superiority, Global Attack, Rapid Global Mobility, and Agile Combat Support – form the basis of AFSOC's five mission areas. These mission areas include Precision Strike/Employment, Information Operations, AF Special Operations Forces (AFSOF) Mobility, Shaping the Battlespace, and Agile Combat Support.[8]

SOF missions occur in operational environments very different from those of conventional forces in the degree of physical and political risk, operational technique, mode of employment, independence from conventional support, and dependence on detailed operational intelligence and indigenous assets. Furthermore, special operations frequently require clandestine, covert, or low visibility techniques.[9] In general, SOF conduct highly classified missions, far forward, in extremely dangerous environments, on short notice, and at night. The SOF environment will be covered in more detail in the next chapter.

With this general understanding of SOF, the AFSOC combat casualty care and evacuation system will be presented emphasizing the importance of time, distance, and immediate surgical care on survival.

Notes

[1] United States Special Operations Forces. *Providing Unique Solutions for a Changing World.* Posture Statement 2000, 1.
[2] Ibid, 11.
[3] Ibid, 43.
[4] Ibid, 44.
[5] Joint Publication 3-05. *Doctrine for Joint Special Operations,* 17 April 1998, II-2.
[6] United States Special Operations Command. *History,* November 1999, 16.
[7] Posture Statement 2000, 12-13.
[8] Air Force Doctrine Document 2-7. *Special Operations,* 17 July 2001, 15.
[9] Ibid, 2-3.

Chapter 2

AFSOC Casualty Care and Evacuation

Minutes of delay make the difference between a rescue operation and a body bag detail.

—General Charles E. Wilhelm, USMC, 20 August 2000
Commander in Chief, Southern Command

Historical Perspective

Historical research studies clearly demonstrate that the longer severely injured casualties remain on the battlefield, the greater the probability of death.[1] Many serious injuries require immediate surgery to stop bleeding, avoid shock, and improve survival. If this cannot be accomplished, casualties may bleed to death from wounds not immediately fatal.[2] Thus, time is the critical factor. Often, time equates to distance. SOF casualties are frequently great distances from definitive medical care. However, by reducing evacuation time and moving critical care and surgical intervention far forward, survival is possible.[3] This far forward initial stabilization "buys" time.

In Vietnam, patient survival greatly improved when the lag-time between wounding and surgery was reduced to less than one hour by extensive use of helicopters and by moving surgical units near the battlefield.[4] The importance of rapid evacuation and treatment of seriously injured is also well recognized in the civilian sector. For example, the Maryland Shock Trauma Center in Baltimore has a "golden hour" policy of bringing

seriously ill or injured patients to the hospital within one hour of injury, often using medical evacuation helicopters. Treatment begins on the ground, at the point of injury, and continues in the air until reaching definitive care at the hospital.[5] On the battlefield, however, the fog, friction, and logistical difficulties of war complicate the entire process of casualty care and evacuation. SOF frequently operate in even more challenging environments than conventional forces.[6] For example, in certain covert or clandestine operations casualty evacuation may have to be delayed for long periods to avoid compromising the mission.[7] In other operations, SOF combat search and rescue units may have to shoot their way in and secure an area in order to evacuate wounded soldiers. This can also consume a great deal of time. Furthermore, SOF frequently operate at such great distances from a main operating base (MOB) where medical units have traditionally been located that the lag-time between wounding and surgery could be many hours because of the long flight time.[8] Therefore, the surgical capability must be brought far forward as close to the casualty as possible to save precious time and, as a result, preserve life and limb.[9]

Forward Resuscitative Surgery – Mobile Field Surgical Team

Forward resuscitative surgery (FRS) is initial emergency resuscitative surgery incorporating life and limb-saving procedures provided as close to the point of wounding as tactically feasible. FRS is a component of the US DoD Force Health Protection (FHP) Program, under the pillar "Casualty Care and Management." FRS is a joint term.[10] The AF equivalent is the Mobile Field Surgical Team (MFST), which consists of five members: an emergency medicine specialist, a general surgeon, an orthopedic surgeon, an anesthesiologist, and an operating room nurse. The MFST deploys with man-portable

surgical backpacks (containing supplies and equipment) and can be operational within 15 minutes of arrival at a shelter of opportunity.[11] This team deploys as part of the AFMS Expeditionary Medical Support (EMEDS) Basic Package, the first increment of the AF Theater Hospital (AFTH) medical system. The AFMS has transformed itself to support the Aerospace Expeditionary Force (AEF) concept and fulfill AF Vision 2020 in support of Joint Vision 2020 and National Military Strategy. The EMEDS/AFTH medical system with its five levels of care, described in appendix A, is how the conventional AFMS supports AEF forces deployed in any worldwide contingency. This EMEDS/AFTH building block concept is lightweight, mobile, modular, capable across the full spectrum of deployed scenarios, and designed to be tailored to the specific operation. The mission of EMEDS/AFTH is to rapidly deploy and provide forward stabilization, primary care, FHP, and aeromedical evacuation (AE) preparation for AEF forces or civilian casualties.[12] EMEDS/AFTH receives casualties from various sources, including SOF operating far forward. To complement and ensure success of FRS, as well as the handling of other casualties, superior post-operative and enroute intensive care is essential.

Enroute Intensive Care – Critical Care Air Transport Team

The conventional AFMS AE mission is to rapidly evacuate patients by fixed-wing aircraft. AE can operate as far forward as fixed-wing aircraft are able to conduct air and land operations.[13] Most AE missions are performed by aeromedical evacuation crewmembers (AECM) – a Flight Nurse and two AE medical technicians providing routine in-flight care to stable patients.[14] In the past, AFMS doctrine focused on a "return to duty" concept which required a large medical footprint. Since 1994, the emphasis has

been on "evacuate and replace," allowing a leaner and lighter medical footprint to reduce medical logistic requirements. This change in philosophy, driven by changes in the nature of warfare, also changed AE doctrine to include medical capabilities for the evacuation of "stabilized" versus "stable" casualties. "Stabilized" is defined as airway stabilized, hemorrhage controlled, shock treated, and fractures splinted.[15] This, in turn, led to the need for and development of critical care in the air capabilities – the Critical Care Air Transport Team (CCATT) – to monitor and manage casualties requiring enroute intensive care. A CCATT can be added to the AECM to provide a higher level of care to stabilized, yet critically ill or injured, patients during AE staging and flight. A CCATT is modular, portable, lightweight and consists of three people – a critical care or internist physician, a critical care nurse, and a cardiopulmonary technician skilled in respiratory therapy.[16] Just as the MSFTs "belong" to the conventional AFMS EMEDS/AFTH system, CCATTs "belong" to the conventional AFMS AE system. Table 1 (page 9) summarizes the conventional AFMS assets discussed here. AFSOC does not have its own MFSTs and CCATTs. When AFSOC needs these specialty care teams, they must "borrow" them from another Major Command (MAJCOM).

Table 1 Conventional AFMS Assets

Asset	Team Composition	Capabilities
MFST	Emergency Medicine Specialist, General Surgeon, Orthopedic Surgeon, Operating Room Nurse, Anesthesiologist	Initial surgery in shelter of opportunity; man-portable; operational in 15 minutes
AECM	Flight Nurse, two AE Technicians	Routine in-flight care for stable patients; maintain level of care enroute
CCATT	Critical care/internist physician, critical care nurse, cardiopulmonary medical technician	Added to AECM; monitor/ manage stabilized casualties; enroute intensive care

AFSOC Medical Missions, Assets, and Capabilities

The primary missions of AFSOC medics are to support deployed SOF and conduct casualty evacuation (CASEVAC). CASEVAC is the movement of casualties, both to and between Medical Treatment Facilities (MFT), via rotary or fixed wing aircraft.[17] The AFSOC medics' goal is to stabilize injured or seriously ill casualties while moving them towards definitive care.[18] Since they operate in extremely austere environments, their intrinsic medical capability to function in these environments is extremely limited. Just like the conventional AFMS, AFSOC employs a medical Unit Type Code (UTC) concept to assist with mission planning and to maximize utilization of limited medical resources. Medical assets are tailored to mission requirements using the UTC system.[19]

Generally, the first UTCs to provide far forward medical support to AFSOC are the Pararescue Jumpers (PJ), who are actually line combatants and special tactics forces, with Emergency Medical Technician Paramedic (EMT-P) training. They perform combat

search and rescue and first-responder medical care until hand-off to the SOF Medical Element (SOFME) team – the primary AFSOC medical UTC.[20]

Each SOFME team consists of one Flight Surgeon (FS) and two Independent Duty Medical Technicians (IDMT). FSs are aerospace medicine physicians, not general surgeons (unless they have also completed a surgical residency program). IDMTs are certified EMT-Ps. SOF-trained Physician Assistants may also be on the SOFME team.[21] SOFME capabilities include preventive, aerospace, and operational medicine, primary care, advanced trauma life support, advanced cardiac life support, and CASEVAC support from far forward to the SOF air-ground interface point with the conventional AFMS.[22] SOFMEs provide resuscitation and stabilization short of surgical intervention. To increase its medical capabilities AFSOC can borrow MFSTs or CCATTs from other MAJCOMs.[23]

The SOFME team deploys with a SOF medical kit, consisting of a trauma vest and backpack for each member, with medical supplies and equipment for immediate trauma life-saving measures and treatment – on the ground or during CASEVAC missions.[24] Another AFSOC-unique medical supply and equipment package, the Rapid Response Deployment Kit (RRDK), is used with the SOF medical kit.[25] To facilitate maximum flexibility in tailoring capabilities to mission needs, the RRDK has four modules: trauma, resuscitation, medical and environmental. The kit is designed for short-term use (up to 30 days), is not self-sufficient, and requires a shelter of opportunity. The AFSOC self-sufficient supply and equipment package is called SOF Base Medical Support.[26] It consists of three modules: air transportable treatment unit (ATTU), laboratory, and biological/chemical warfare treatment. The ATTU is a mobile MTF complete with

generators, environmental control unit, and tents, all transported via trailer. The SOF Base Medical Support is deployed with the RRDK (the ATTU is the shelter of opportunity) and is self-sufficient for short periods (up to 30 days); for extended deployments, base-operating support is required. Table 2 summarizes the AFSOC medical assets discussed.

Table 2 AFSOC Medical Assets

Asset	Characteristics	Capabilities
PJ	Line combatants; special tactics forces	EMT-P; first responders (Level 1 care)
SOFME	FS, two IDMTs	Perform CASEVAC; Level 1/limited Level 2 care
SOF Medical Kit	Trauma vest/backpack	SOFME supplies and equipment
RRDK	Four Modules: Trauma, Resuscitation, Medical, Environmental	Added to SOF medical kit; short-term (30 days); needs shelter of opportunity
SOF Base Medical Support	Three Modules: ATTU, Laboratory, Bio/Chem Warfare Treatment	Self sufficient supply and equipment module up to 30 days; deploys with RRDK
ATTU	Mobile MTF with tents, generator, environmental control unit	Shelter of opportunity for RRDK

Using these assets, planners tailor medical support to SOF missions based on operational requirements and constraints. Frequently constraints such as covert or clandestine operations and logistical challenges dictate a very small medical footprint. Furthermore, timely re-supply is often very difficult and sometimes impossible.[27]

Because SOF medical supplies and equipment are limited, they may not move with the casualty during hand-off to the AFMS conventional AE system.[28] AE utilizes the Patient Movement Items (PMI) system to ensure specific medical supplies and equipment are available as patients move through the AE system and levels of care.[29] This seamless

system supports the in-transit patient care capability without removing equipment from patients, exchanges like-kind PMI without degrading medical capability, and provides prompt recycling of PMI. It is the originating MTF's responsibility to provide PMI to support the patient during AE. PMI accompanies the patient throughout AE, from the originating MTF to the final destination MTF. SOFME, however, does not utilize PMI assets. Some SOF medical supplies and equipment items are different (lighter/leaner) from conventional medical supplies and equipment and cannot flow with the casualty. If SOFMEs allow their unique supplies and equipment to transfer with the casualty, they may not have what they need for their casualty due to reduced re-supply capabilities. This could compromise the SOF medical mission. As a result, appropriate PMI may need to be pre-positioned at the base where SOF interfaces with/hands-off to conventional AFMS forces.[30] In any case, this and other doctrinal differences between SOF and AE have to be addressed during deliberate mission planning.

In summary, AFSOC medical assets in terms of personnel, supplies, and equipment are limited, especially for extended medical operations. As a result, close integration, coordination, and cooperation is required between AFSOC medical personnel and those in the established theater medical systems.

AF SOFME Constraints and Challenges

Many factors make SOF medical support unique in scope and nature. AFSOC medicine is constrained by the operational environment.

1. Special operations missions are often high risk/high gain in pursuit of national objectives. As a result, the operational environment is likely to be a higher medical and operational threat. In addition, missions are often short-notice, at night, in enemy-held, denied, or sensitive territory.[31]

2. SOF missions are often covert or clandestine in nature. Operational security (OPSEC) issues and concerns are of paramount importance making casualty movement a problem in sensitive areas.[32]
3. SOF work in remote locations making conventional support, re-supply, and evacuation, limited and difficult.[33] In other words, SOF operate under austere conditions in immature theaters on their own.

AFSOC is tasked to provide the highest quality casualty care and management possible under the above operating conditions with the following challenges.

1. AFSOC must borrow surgical and in-flight critical care capabilities from other MAJCOMs.
2. The absence of organic healthcare structure and dedicated AE assets. SOF missions are conducted far forward from definitive medical care at fixed facilities overseas or the Continental United States (CONUS).[34]
3. SOF aircraft conditions and mission profiles limit the extent of medical care rendered during flight from the point of injury to a staging base. AFSOF fixed-wing (MC-130) and rotary-wing (MH-53) aircraft are not configured for or strictly used for CASEVAC. As a result, SOFMEs operate in noisy environments with excessive vibration, turbulence, temperature extremes, and darkness (using night vision goggles).[35]
4. As previously mentioned, AFSOC medical assets are limited. For example, if only one FS is available, a decision will have to be made where this capability is needed the most – on the CASEVAC aircraft or on the ground at the staging base.[36]

The bottom line is that SOFMEs are challenged to provide the same level of care as conventional AFMS forces but without the far forward surgical care, deployable hospitals, a dedicated AE system, and CONUS base support.[37] Therefore, SOFME must work closely with sister services, host nation (HN), and conventional AFMS personnel. The following discussion will focus on interfaces with AFMS systems.

AFSOF and AFMS Interfaces

There are two main AFSOF-conventional AFMS interfaces – the AE system and the EMEDS/AFTH system. In most cases, the first interface is with AE. As already mentioned, AFSOC does not have organic AE assets and must identify and obtain

required conventional AE support during deliberate mission planning. Like EMEDS, AE UTCs can be tailored to support SOF missions.[38] While there are countless possible SOF mission and casualty scenarios, Figure 1 (page 15) illustrates a notional transload/casualty evacuation process.[39] PJs are the first responders and begin Level 1 care far forward at the point of injury. SOFME personnel, usually via AFSOF MH-53 helicopter, arrive at the far forward position to perform CASEVAC. Aboard the helicopter, SOFMEs render Level 1 and limited Level 2 care (resuscitation/stabilization short of surgical intervention). Next, casualties are transloaded from the helicopter onto an AFSOF MC-130 at the forward staging base (FSB). Depending on the mission and environment, the FSB might just be a "dirt strip" where the MC-130 picks up casualties and leaves, or it might have a shelter of opportunity (e.g., ATTU) and a conventional AFMS MFST. In any case, SOFMEs continue to provide medical care aboard the MC-130 during transport to the hand-off or interface point with conventional medical support – AE or EMEDS/AFTH – at the intermediate staging base (ISB)/MOB.[40] Depending on the situation, medical capabilities at the ISB/MOB can vary from an MFST to an EMEDS/AFTH. The location of a conventional AFMS CCATT, added to provide critical care aboard fixed wing aircraft, can also vary from the FSB to the ISB/MOB.

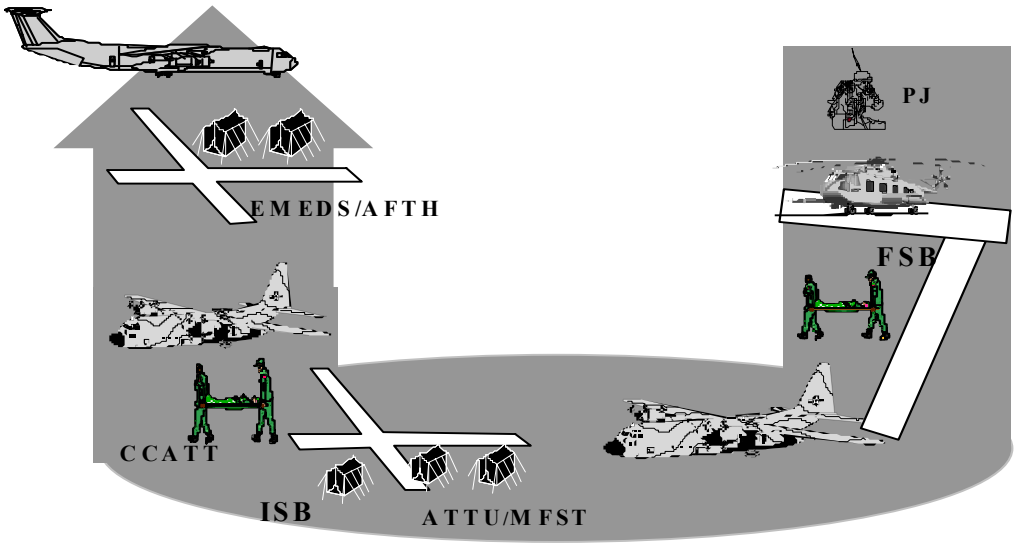

Figure 1. Notional Transload/Casualty Evacuation

This generic scenario can differ based on the following factors:

1. The nature of the SOF mission and the operating environment.
2. The nature of the FSB and ISB – what is available at these immature bases in terms of facilities, supplies, equipment and capabilities.
3. The distances, which can be significant, between the point of injury and the FSB or ISB/MOB – wherever SOF hands-off/interfaces with conventional AE or EMEDS/AFTH. Distance equates to time, and when prolonged, can increase disability and death.
4. Whether an MFST or CCATT augments the mission.
5. The availability of conventional AE at a staging base. Casualty stabilization (Level 2 care) can become prolonged (last over 24 hours) if conventional AE is not immediately available. In a major contingency, conventional AE should be available at a staging base (the type of base depends on the situation).[41] Regardless of the interface point, SOF will eventually hand-off casualties to AE for transport to more definitive care. However, in a SOF-only operation, conventional AE may not be immediately available. In this situation, the commander has at least three options: (1) wait for conventional AE; (2) use HN support if available and acceptable; or (3) continue to transport casualties via SOF aircraft to a location suitable for hand-off to conventional AE or the nearest, higher-level EMEDS/AFTH.[42] Naturally the best option depends on the condition of the casualties and the availability of both AFSOF and conventional AE aircraft.

When conventional AFMS MFSTs and CCATTs augment SOFMEs, it is more than just a passing interface or a quick hand-off – it is a working relationship. How well AFSOF and conventional medical forces work as a cohesive team depends on several factors including training and operational security. These two topics are vitally important to AFOSF and the success of their missions.

AFSOF-Specific Medical Training

In general, SOFME teams are highly trained to function in a unique operational environment. To completely train AFSOC medical forces and then maintain a "mission ready" status requires a considerable resource and time investment. Since personnel must be able to function in an airborne environment on SOF or other opportune aircraft, they must be trained on aircraft emergency and egress procedures, use of aircraft emergency equipment, and in-flight medical care including advanced life support skills performed in low level, low light or blackout conditions.[43] Personnel must also be proficient in transload and engines running on/off load procedures. SOF missions are often time-sensitive with limited "windows of execution." Appropriate training and practice are critical to first-time mission success. This issue of paramount importance will be discussed more thoroughly and analyzed in the next chapter.

SOF Operational Security

All warfare is based on deception.

— Sun Tzu

Operational security (OPSEC) is also extremely important to SOF, especially during operations in hostile or denied areas and during covert or clandestine missions.[44] OPSEC is critical from initial planning to force recovery stages of special operations missions.[45]

When SOF interfaces with conventional forces, OPSEC restrictions make planning vastly more difficult and complex. For example, OPSEC concerns may delay casualty movement and complicate medical care. Furthermore, once handed off to conventional AFMS forces, SOF casualties are not regulated and managed the same as conventional casualties.[46] This can pose special challenges for both SOF and conventional medical forces. In short, because SOF interacts with conventional forces during mission planning and actual operations, OPSEC considerations are extremely important. Not complying with OPSEC policies could compromise the SOF mission and needlessly endanger lives. OPSEC issues will be addressed further in the next chapter.

With this general understanding of AFSOC casualty care and evacuation, several key medical issues will be analyzed.

Notes

[1] Ronald F. Bellamy. "The Causes of Death in Conventional Land Warfare: Implications for Combat Casualty Care Research." *Military Medicine* 149, February 1984, 57.

[2] Bellamy, 60.

[3] Lt Col A Hawley. "Trauma Management on the Battlefield: A Modern Approach." *J R Army Med Corps*, 142, 1996, 122.

[4] BGen (Ret) Eran Dolew. "Early Evacuation of Patients from the Battlefield After Laparotomy: Experiences in Vietnam, Israel, and the Falklands." *Military Medicine*, 153, February 1987, 57.

[5] "Military to Train at Trauma Centers." Baltimore Associated Press, 1 October 2001, 2.

[6] Joint Publication 3-05. *Doctrine for Joint Special Operations,* 17 April 1998, vii-viii.

[7] Joint Publication 4-02.2. *Joint Tactics, Techniques, and Procedures for Patient Movement in Joint Operations,* 30 December 1996, IV-2.

[8] Ibid.

[9] Hawley, 123.

[10] *Forward Resuscitative Surgery Report 27-31 January 1997*, 1-1.

[11] Air Force Medical Service. *Concept of Operations for Expeditionary Medical Support (EMEDS)/Air Force Theater Hospital (AFTH) System*, 10 September 1999, 3.

[12] Ibid, 10.

Notes

[13] Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.5. *Aeromedical Evacuation (AE)*, 19 July 2001, 5.

[14] Ibid, 23-24.

[15] EMEDS Concept of Operations, 7.

[16] AFTTP 3-42.5, 27.

[17] Joint Publication 4-02. *Doctrine for Health Service Support in Joint Operations*, 30 July 2001, GL-4.

[18] Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.6. *USAF Medical Support for Special Operations Forces (SOF)*, 5 September 2001, 18.

[19] Air Force Special Operations Command (AFSOC) *Medical Concept of Operations*, 15 March 2000, 29.

[20] AFTTP 3-42.6, 19.

[21] Ibid, 34.

[22] Ibid, 10.

[23] Ibid, 18.

[24] AFSOC Medical Concept of Operations, 29.

[25] Ibid, 30.

[26] Ibid, 30-31.

[27] AFTTP 3-42.6, 26.

[28] AFSOC Medical Concept of Operations, 16.

[29] AFTTP 3-42.5, 40-41.

[30] AFSOC Medical Concept of Operations, 16.

[31] "United States Special Operations Command Office of the Command Surgeon." Electronic Slides, October 2001.

[32] Ibid.

[33] Ibid.

[34] Col James J. Dougherty. "The AFSOC Medical Service Capabilities and Challenges." Electronic Slides, October 2001.

[35] AFTTP 3-42.5, 28-29.

[36] AFSOC Medical Concept of Operations, 15.

[37] Dougherty, Electronic Slides.

[38] AFSOC Medical Concept of Operations, 16.

[39] Dougherty, Electronic Slides.

[40] Ibid.

[41] AFSOC Medical Concept of Operations, 16.

[42] Ibid.

[43] AFTTP 3-42.6, 28.

[44] Air Force Doctrine Document (AFDD) 2-7. *Special Operations*, 17 July 2001, 42.

[45] Ibid, 43.

[46] Joint Publication 4-02.2, IV-2.

Chapter 3

Key Issues and Analysis

> *…Special operations forces succeed, in spite of their numerical inferiority, when they are able to gain relative superiority through the use of a simple plan, carefully concealed, repeatedly and realistically rehearsed, and executed with surprise, speed, and purpose.*
>
> —William H. McRaven
> Spec Op: Case Studies in Special Operations Warfare

To answer the original questions of this research – what additional medical capabilities does AFSOC need and what is the best way for AFSOC medics to interface with conventional medical forces – several key issues must be analyzed in more depth.

The Number One Issue

> *The word special in special operations does not imply a rejection of conventional Air Force processes in search of independence. Rather, it refers to unique missions driving different tools and training that require unique medical support.*
>
> —Col James Dougherty, AFSOC Surgeon

The number one initiative for AFSOC/SG and his troops is to have their own MFST and CCATT-like capabilities. This has already been proposed to the AF/SG. There are many great reasons why having MFSTs and CCATTs organic to AFSOC is essential. Most importantly, surgical and critical care assets *far* forward will save more lives. SOF deserve the best medical care possible or at least the same care offered to other service

members. Time and distance are critical factors in saving life and limb. The closer surgical and critical care capabilities are to the point of injury, the greater the chance of success. Therefore, surgical and critical care capabilities must be brought far forward to the casualties. In the SOF world, saving life and limb is more than just a moral obligation; SOF are limited resources, highly trained to perform unique missions. They cannot be mass produced or replaced overnight.

Specially trained and equipped AFSOC-specific versions of the conventional MFST and CCATT would be light, lean, and modular enough to operate far forward in austere environments. AFSOC-specific MFSTs would expand the capability for surgical care far forward, and AFSOC-specific CCATTs would provide enroute critical care maintaining stability during evacuation until hand-off to conventional medical forces. At this time, it is not exactly clear what these AFSOC-specific teams (UTCs) should consist of in terms of personnel, supplies, and equipment. They may be different from the conventional teams to meet the unique requirements of SOF missions. The exact make-up of these teams is not the important issue right now; the primary issue is obtaining authorization to procure these additional capabilities as AFSOC assets. Since AFSOC conducts numerous operations and exercises, they can quickly field-test various AFSOC-specific teams to figure out the best personnel mix.

So far, this all sounds reasonable – AFSOC with their own specific surgical and critical care teams operating far forward to save more lives. But, some may ask – why does AFSOC need their own teams? Why can't they just continue to "borrow" them from other MAJCOMs? The answers to these questions lie in several key areas: training, command, control, and mission planning, and OPSEC. Analyzing the issues in each of

these areas leads to the conclusion that AFSOC must have organic, specific MFST and CCATT-like capabilities.

Training

> *Four brave men who do not know each other will not dare to attack a lion. Four less brave men, but knowing each other well, sure of their reliability…will attack resolutely.*
>
> —Ardant Du Picq

Three major training issues inhibit effective use of conventional AFMS MFSTs and CCATTs in the SOF environment. First, AFSOF require a significant amount of SOF-specific training to function in their unique environment. For example, AFSOC-specific MFSTs and CCATTs would require a minimum of six additional courses spanning a nine-week period.[1] Ideally, team members would attend these courses together to develop unit integrity, mission focus, and team morale. In contrast, because conventional AFMS MFSTs and CCATTs belong to other MAJCOMs, they generally do not get this SOF-specific training. This could severely inhibit their effectiveness in the SOF environment and have a disastrous impact on the mission. As General Douglas MacArthur once said, "In no other professions are the penalties for employing untrained personnel so appalling or irrevocable as in the military."[2] On the other hand, if AFSOC had its own surgical and critical care teams, they would get the required, specialized training.

The second issue – participating in joint SOF training and exercises is also very important. Forces need to train like they fight and, for SOF, that means jointly. As a general rule, MFST and CCATT augmentees do not train with SOF from sister services.

This lack of training and experience with the joint team could also negatively impact the mission.

The third important training issue involves ongoing training and exercises prior to actual missions to enhance teamwork – unity of effort and action, which increases mission success. Many SOF missions, as well as supplies and equipment, are unique. To ensure readiness, AFSOF are well-trained. To complement training, AFSOF uses exercises to improve effectiveness. Meticulous rehearsal of special operations is critical to first-time success – second chances are rare.[3] For CCATTs and MFSTs assigned to other MAJCOMs, augmenting SOFME is not their primary mission. Augmentee teams rarely have the opportunity to adequately train with SOFME before missions, especially when short-notice. In addition, SOFME may get a different team or team members from mission to mission resulting in a lack of continuity. These issues can reduce the effectiveness of, or even compromise, the mission. The best way to solve these training problems is to have AFSOC-specific CCATTs and MFSTs organic to and under the control of AFSOC.

Command, Control, and Mission Planning

> *Successful execution of special operations requires centralized, responsive, and unambiguous command and control.*
>
> —Joint Publication 3-05, Doctrine for Joint Special Operations

Currently, when AFSOC needs to borrow MFSTs and CCATTs, command and control (C2) is often unclear and mission planning is complicated and prolonged because of the lengthy process required to coordinate requests through the appropriate MAJCOM channels. Since many SOF missions must be quickly planned and executed, incorporating borrowed MFSTs and CCATTs into the mission can, therefore, be difficult

at best and sometimes impossible depending on how long the coordination process takes. However, by owning CCATTs and MFSTs, with full C2 over their basing, training, employment, and deployment, AFSOC would have much greater flexibility and capability to plan and execute missions to support the warfighter "any time, any place." In addition to C2 and mission planning, OPSEC is a vitally important issue.

Operational Security

...One more thing: OPSEC, OPSEC, OPSEC, OPSEC, and OPSEC.

—Col Rocky Farr, USASOC Surgeon

In the SOF environment, one issue that is constantly addressed from mission planning through execution is OPSEC. A successful mission often depends on the ability to conceal intentions. As a result, AFSOF planning is usually compartmented and stresses deception, concealment, and low visibility.[4] As already mentioned, most conventional MFSTs and CCATTs are not familiar with SOF missions, are not SOF trained, and augment SOF teams on a rotating basis (lack of team continuity). When non-SOF personnel augment AFSOC teams, OPSEC becomes even more of a sensitive and complex issue, especially if the augmentee teams are constantly different. Augmentees must have the appropriate security level and be adequately "read" into special category programs since many SOF missions are secret compartmentalized. On short-notice missions and other times when augmentees cannot properly train with SOF, the possibility of OPSEC problems increases. With critical care and surgical assets under the control of the AFSOC/SG, OPSEC would no longer be an issue, nor would the possibility of mission compromise due to OPSEC breaches. Once AFSOC has their own MFSTs and CCATTs, how should these new teams be employed?

Proposed Employment of AFSOC-Owned MFSTs and CCATTs

> *The soldier's health must come before economy or any other consideration.*
>
> —Napoleon I

AFSOC MFSTs and CCATTs should be positioned as far forward as possible to save life and limb. Depending on the mission, at a minimum, the team(s) could be at the FSB ready to receive casualties transported via rotary wing aircraft from far forward. However, if the distance between the point of critical injury and the FSB is too far (recall the "golden hour"), the teams could be brought as far forward as possible, beyond the FSB, to begin treatment immediately. Recall that the conventional MFST needs a shelter of opportunity to operate. Assuming that AFSOC develops an MFST that also needs a shelter, the ATTU could be used. To save the time required to set-up and dismantle an ATTU, perhaps an aircraft could serve as the shelter of opportunity. This would allow the surgical team to fly far forward, as close to the critically injured as possible, and perform life and limb-saving procedures aboard their parked aircraft. If the AFSOC MFST must then quickly egress to avoid approaching danger, they may have to perform simple life-saving operations in-flight. The goal is to save lives. AFSOC medical assets should be tailored and positioned based on the mission in order to have the right mix at the right place at the right time. Naturally, members of MFSTs and CCATTs must maintain their professional skills through sustainment training.

Sustainment Training for AFSOC MFSTs and CCATTs

Sustainment training for military critical care and surgical professionals is not a new concern. Currently, certain conventional AFMS personnel rotate through various civilian trauma centers (if a military facility is not available nearby) to refresh their skills in

treating severe injuries.[5] Therefore, the means already exists to make sure SOF-owned critical care and surgical specialists maintain mission readiness. In fact, the new USSOCOM Surgeon, Col Hammer, mentioned this very aspect of training in the latest *Journal of Special Operations Medicine*. He recognized that the Service Surgeon Generals are developing trauma surgery programs around the country for training and stated, "we will latch onto that initiative."[6] Not only will these special AFSOC teams require sustainment training, they will have to be supplied and equipped for the SOF environment.

AFSOC Medical Supplies and Equipment

Once the best mix of AFSOC MFST and CCATT-like teams is determined, there may be unique supplies and equipment required to function in the SOF environment (e.g., aboard aircraft maneuvering at low level, at night using night vision goggles, under extremes of weather, noise, and vibration). In addition, SOF should have the means to procure, test, and use the latest medical technologies to help save life and limb. Like SOF now, these supplies and equipment must be light, lean, modular, and mobile. This area – AFSOC-specific supplies and equipment requires further study.

What can be done if AFSOC is not granted organic MFSTs and CCATTs?

"Plan B"

It is possible that AFSOC will not get sufficient organic surgical and critical care capabilities. This would be extremely unfortunate. In this case, measures can be taken to improve current procedures somewhat. For example, designate MFSTs and CCATTs from other MAJCOMs to augment, support, and train with SOFMEs as their primary rather than secondary mission. If team members were consistent from mission-to-

mission, continuity would improve teamwork. However, significant problems remain. MAJCOMs would still have to "give up" their specialty teams to AFSOC, and the coordination process would still waste precious time. Furthermore, augmentees will always create OPSEC problems. In the end, the best situation for everyone – casualties, SOF and conventional forces – is an adequate number of organic AFSOC-specific teams. In addition to the issue of organic surgical and critical care capabilities is the AFSOF-conventional AFMS interface and how and where it should take place.

AFSOF-Conventional AFMS Interface

Regardless of the mission or situation, AFSOF will interface with the conventional AFMS. As explained in Chapter 2, the most common initial interface point is the hand-off of casualties to AE at a base. Concerns with the AE interface, such as C2, mission planning, AE availability, security, training, and PMI, were also discussed. One solution is to have SOF assets transport casualties from point of injury to the nearest conventional EMEDS/AFTH with the appropriate level of care. This would be the SOF casualty hand-off/interface point with conventional AFMS personnel. In this scenario, conventional AFMS personnel do not come forward into dangerous areas where they are not trained to operate and where security problems could compromise the mission. In addition, it does not rely on the availability of conventional AE. AFSOC medics are trained to operate in proximity to ground combat and do not require a fixed staging area to prepare casualties for movement as AE does. This scenario makes some assumptions. First, it assumes that AFSOC has organic MFST and CCATT capabilities. Second, it requires adequate AFSOC resources including medical personnel, aircraft (SOF or other opportune), and aircrews to transport casualties potentially long distances to the nearest conventional

EMEDS/AFTH. In any case, it would be advantageous to push the interface/hand-off point to a suitable facility in the rear.

When AE and AFSOF do interface, some improvements may be possible. First, AE liaison personnel assigned to AFSOC would improve C2, especially pre-identification of AE for SOF operations, mission planning, and casualty transport coordination. Second, conventional medics usually have very little general knowledge of SOF, their missions, operational environment, OPSEC issues, etc. Perhaps some "basic training" on SOF for conventional forces who support SOF would be advantageous. This is not a new idea. At the USSOCOM activation ceremony on 1 June 1987, Admiral William J. Crowe, Chairman of the Joint Chiefs of Staff, said, "Educate the rest of the military – spread a recognition and understanding of what you do, why you do it, and how important it is that you do it."[7] Even though 15 years have passed, the Admiral's advice is still valid. What else can be done to improve the AFSOF-conventional AE medical interface?

Re-evaluate the Conventional AE System?

The recommendations offered here will improve the interaction and interface between AFSOF and AE to a certain point. To *really* improve the interface, for the sake of SOF casualties, the conventional AE system may need to be re-evaluated. For example, future trends seem to indicate that the norm will be transporting a smaller number of stabilized, yet potentially critically ill or injured, casualties versus plane-loads of stable patients.[8] As a result, how should the AE system adapt to this trend as well as the increased AFSOC surgical and in-flight critical care capabilities? Can current AECM sustain the high level of casualty care started by AFSOC medics? If not, the current mix of AECM personnel and training may need to be changed to ensure a sustained level of

casualty care, otherwise AE will have to task a CCATT. The concern with doing this – some casualties will not require the services of a CCATT, yet will need more enroute care than current AECM can provide. Perhaps there is a gap in AE in-flight capabilities between providing routine care to stable patients and critical care to stabilized patients with little in-between. These are just a few AE questions that surfaced during this research. Examining the entire AE system is beyond the scope of this project and requires further study.

Now that key issues regarding AFSOC medical assets/capabilities and their interface with conventional AFMS forces have been examined, specific recommendations are appropriate.

Notes

[1] Electronic correspondence with Col James J. Dougherty, March 2002.
[2] Air Force Doctrine Document (AFDD) 2-7. *Special Operations,* 17 July 2001, 40.
[3] AFDD 2-7, 37.
[4] AFDD 2-7, 6-7.
[5] "Military to Train at Trauma Centers." Baltimore Associated Press, 1 October 2001, 1.
[6] Col David Hammer. "From the Surgeon. United States Special Operations Command." *Journal of Special Operations Medicine*, 1, no. 3 (Fall 2001).
[7] Joint Publication 3-05. *Doctrine for Joint Special Operations*, 17 April 1998, I-1.
[8] Electronic correspondence with Col James J. Dougherty, March 2002.

Chapter 4

Summary, Recommendations, and Conclusions

> *Our military deserves praise for the early successes in the war on terrorism. But even as we continue that war, we cannot afford to wait to transform our military for the threats of the 21st Century.*
>
> —Donald H. Rumsfeld, Secretary of Defense, 30 January 2002

Summary

As adversaries continue to use terrorism and asymmetric methods against us, SOF will be the primary weapon of choice. Special operations are and will continue to be a very dangerous business, and SOF will be in harm's way all over the world. This calls for the best possible medical care as far forward as possible to save life and limb. SOF are limited resources and cannot be mass-produced overnight – all the more reason to save these specially trained and highly valuable instruments of national security. To accomplish this, AFSOC needs "tip of the spear" medical personnel, supplies, and equipment in adequate amounts. They must own all the medical assets they need to do the job and not have to borrow them from the conventional AFMS or other MAJCOMs. In addition, when AFSOC and the conventional AFMS do interface and interact, improvements are possible and desirable to benefit SOF casualties. Specific recommendations are summarized and presented.

Recommendations

1. Allocate funding to AFSOC for SOF-specific, organic surgical and critical care capabilities. Adequate funding is required for manpower, training, supplies and equipment (high-tech, light, and lean) that these specialty teams require to operate in the special operations environment.

- AFSOC/SG can determine the best mix of personnel for these teams (SOF UTCs) via field-testing. Conceivably, more than one version of each team might be necessary to maximize flexibility in tailoring capabilities to the specific SOF missions.
- AFSOC/SG can determine how many teams are needed considering the fact that SOF are operating all over the globe. These new assets need to be pre-positioned far forward as close to the point of injury as possible, where SOF is operating.
- SOF-specific teams should be able to literally *operate* far forward in any shelter of opportunity, including rotary (e.g., CV-22) or fixed wing (e.g., MC-130) on the ground or in the air. This is the ultimate way to shorten the time between injury and initial surgical intervention and provide critical care maintenance to overcome the distances to definitive care.
- AFSOC/SG should have total control of the new personnel/teams. Ideally, they should be assigned near Hurlburt Field for training/exercise purposes and to facilitate crisis action planning. As more teams become available, they can be assigned at major SOF bases overseas.
- Team members will require periodic sustainment training for their special skills (e.g., trauma surgery) in military or civilian facilities.

2. Whenever feasible, AFSOF should transport SOF casualties from point of injury to the nearest conventional EMEDS/AFTH with the appropriate level of care. This will prevent some of the AE-SOF interface problems, such as OPSEC, training, PMI, AE availability, mission planning, C2, and possible mission compromise. Naturally, this option depends on AFSOC aircraft and personnel availability and procurement of AFSOC surgical and in-flight critical care capabilities.

3. The following recommendations are offered to improve the interaction and interface between AFSOF and the conventional AFMS, specifically AE.

- Assign AE liaison people to AFSOC to improve C2, especially pre-identification of AE for SOF operations, mission planning, and casualty transport coordination.
- Develop and provide basic SOF education/training for conventional AFMS who interact/interface with SOF medical personnel and casualties. Important topics would include a general overview of SOF, missions, OPSEC, PMI, etc.
- Designate specific MFST and CCATT teams (from other MAJCOMs) to augment and train with SOF as their primary mission. This will improve C2, mission planning, OPSEC, training, and teamwork (continuity).

4. Given current doctrine of transporting stabilized versus stable patients, does the conventional AFMS AE system meet the needs of the 21st Century warfighter and the enhanced capabilities of AFSOC medical personnel? Additional research is needed.

5. Finally, these recommendations will need to be reflected in doctrine. Just like General Michael E. Ryan, former USAF Chief of Staff said, "As the world changes, as the threat changes, and as we learn fresh lessons, our doctrine keeps pace."[1]

Conclusions

In short, this research demonstrated that AFSOC must have organic surgical and in-flight critical care capabilities to enhance their ability to save life and limb.[2] In addition, the interface between conventional AFMS and AFSOF medical personnel can and should be improved to benefit SOF casualties.

Notes

[1] Air Force Doctrine Document (AFDD) 2-7. *Special Operations*, 17 July 2001, i.

[2] As this research paper was being finalized, the AF/SG approved two MFSTs and two CCATTs for AFSOC. This is terrific news and a great start towards providing life and limb-saving surgical and critical care capabilities to SOF operating far forward.

Appendix A

Levels of Care

The AFMS has the following five levels of care.[1]

Level 1 – First Responder. Level 1 care includes self-aid, buddy-aid, combat lifesaver skills, examination, and emergency lifesaving measures such as maintenance of the airway, control of bleeding, prevention and control of shock, splinting/immobilizing fractures, and prevention of further injury.

Level 2 – Casualty Collection and Forward Resuscitative Surgery. At a minimum, Level 2 care includes resuscitation and stabilization. It may include advanced trauma management, emergency medical procedures, forward resuscitative surgery capability, basic laboratory, limited x-ray, pharmacy, and temporary holding facilities.

Level 3 – Theater Hospital. Level 3 care includes clinical capabilities normally found in an MTF. The MTF can provide resuscitation, initial wound surgery, and post operative treatment.

Level 4 – Mature Theater Hospital. Level 4 care includes surgical capabilities found at Level 3 plus rehabilitative and recovery therapy. Can be at a fixed MTF in or outside CONUS.

Level 5 – Definitive Care. Level 5 is definitive, convalescent, restorative, and rehabilitative care in a large fixed facility CONUS or a Commander-in-Chief-approved safe haven.

Notes

[1] Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.6. *USAF Medical Support for Special Operations Forces (SOF),* 5 September 2001, 37-38.

Glossary

Abbreviations and Acronyms

AE	Aeromedical Evacuation
AECM	Aeromedical Evacuation Crewmembers
AEF	Aerospace Expeditionary Force
AFMS	Air Force Medical Service
AFSOC	Air Force Special Operations Command
AFSOF	Air Force Special Operations Forces
AFTH	Air Force Theater Hospital
ATTU	Air Transportable Treatment Unit
CAP	Crisis Action Planning
CASEVAC	Casualty Evacuation
C2	Command and Control
CCATT	Critical Care Air Transport Team
CONUS	Continental United States
EMEDS	Expeditionary Medical Support
EMT	Emergency Medical Technician
FHP	Force Health Protection
FRS	Forward Resuscitative Surgery
FS	Flight Surgeon
FSB	Forward Staging Base
HN	Host Nation
IDMT	Independent Duty Medical Technician
ISB	Intermediate Staging Base
MAJCOM	Major Command
MFST	Mobile Field Surgical Team
MOB	Main Operating Base
MTF	Medical Treatment Facility
OPSEC	Operational Security

PJ	Pararescue Jumper
PMI	Patient Movement Items
RRDK	Rapid Response Deployment Kit
SG	Surgeon General
SOF	Special Operations Forces
SOFME	Special Operations Forces Medical Element
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command
UTC	Unit Type Code

Clandestine operation. An operation sponsored or conducted by governmental departments or agencies in such a way as to assure secrecy or concealment. A clandestine operation differs from a covert operation in that emphasis is placed on concealment of the operation rather than concealment of identity of the sponsor (AFDD 2-7, 49).

Covert operation. An operation planned and executed to conceal the identity of or permit plausible denial by the sponsor. An operation can be both covert and clandestine (AFDD 2-7, 48).

Transload. Transfer of casualties from one airframe to another in the immediate proximity to facilitate evacuation from forward areas. Primarily at night and with engines running (AFTTP 3-42.6, 33).

Bibliography

Air Force Doctrine Document (AFDD) 2-4.2. *Health Services,* 13 November 1999.

Air Force Doctrine Document (AFDD) 2-7. *Special Operations,* 17 July 2001.

Air Force Medical Service. *Concept of Operations for Expeditionary Medical Support (EMEDS)/Air Force Theater Hospital (AFTH) System,* 10 September 1999.

Air Force Special Operations Command. *Medical Concept of Operations,* 15 March 2000.

Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.1. *Medical Command and Control,* 29 June 2001.

Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.5. *Aeromedical Evacuation (AE),* 19 July 2001.

Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.6. *USAF Medical Support for Special Operations Forces (SOF),* 5 September 2001.

Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.7. *Aerospace Medical Contingency Ground Support System,* 24 August 2001.

Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42.8. *Medical Logistics and Blood Support Operations,* 24 September 2001.

Bellamy, Ronald F. "The Causes of Death in Conventional Land Warfare: Implications for Combat Casualty Care Research." *Military Medicine* 149, February 1984, 55-62.

Butler, Maj Frank, K. and Hagmann, Lt Col John. "Tactical Combat Casualty Care in Special Operations." *Military Medicine* 161, Supplement 1, 1996, 3-15.

Carlton, Lt Gen Paul K Jr. "Air Force Medical Service Update." Electronic Slides, 21 August 2001.

Carlton, Lt Gen Paul K Jr. "Air Force Medical Service Readiness Update." Electronic Slides, September 2000.

Dolew, BGen (Ret) Eran. "Early Evacuation of Patients from the Battlefield After Laparotomy: Experiences in Vietnam, Israel and the Falklands." *Military Medicine*, 152, February 1987, 57-59.

Dougherty, Col James J. "Operational Medical Support for the Tip of the Spear. The Heart of Air Force Special Operations Forces (AFSOF) Medicine." *Aerospace Power Journal*, XV, no. 4 (Winter 2001): 27-33.

Dougherty, Col James J. "The AFSOC Medical Service Capabilities and Challenges." Electronic Slides, October 2001.

Enroute Care Seminar Report 12-15 May 1997. Sponsored by the J-4, Medical Readiness Division, Joint Staff and Commandant's Warfighting Laboratory, United States Marine Corps. Prepared by USA, USMC, USN, and SRA International, Inc.

Forward Resuscitative Surgery Seminar Report 27-31 January 1997. Sponsored by the

J-4, Medical Readiness Division, Joint Staff and Commandant's Warfighting Laboratory, United States Marine Corps. Prepared by USA, USMC, USN, and SRA International, Inc.
Hammer, Col David. "From the Surgeon. United States Special Operations Command." *Journal of Special Operations Medicine*, 1, no. 3 (Fall 2001).
Hawley, Lt Col A. "Trauma Management on the Battlefield: A Modern Approach." *J R Army Med Corps*, 142, 1996, 120-125.
Hersack, Lt Col Richard A. "Critical Care Aeromedical Transport Teams." Electronic Slides, August 1997.
Hersack, Lt Col Richard A. "Patient Evacuation for 2010: Providing Continuous Enroute Care." Electronic Slides, May 1997.
Joint Publication 3-05. *Doctrine for Joint Special Operations,* 17 April 1998.
Joint Publication 3-05.1. *Joint Tactics, Techniques, and Procedures for Joint Special Operations Task Force Operations*, 19 December 2001.
Joint Publication 4-02. *Doctrine for Health Service Support in Joint Operations,* 30 July 2001.
Joint Publication 4-02.2. *Joint Tactics, Techniques, and Procedures for Patient Movement in Joint Operations,* 30 December 1996.
"Military to Train at Trauma Centers." Baltimore Associated Press, 1 October 2001, 1-2. From Military.com
United States Department of Defense. *Force Health Protection (FHP),* 27 August 2001.
"United States Special Operations Command Office of the Command Surgeon." Electronic Slides, October 2001.
United States Special Operations Command. *History*, November 1999.
United States Special Operations Forces. *Providing Unique Solutions for a Changing World.* Posture Statement 2000.